

Space Biology Meets Astrobiology: Critical Synergies and Concerns. Penelope J. Boston¹ and Melissa Kirven-Brooks¹. ¹NASA Astrobiology Institute, NASA Ames Research Center, Moffett Field, CA, USA.

The broad fields of space biology and astrobiology share much in common in terms of science questions, approaches, and goals. However, historical circumstances and funding agency practices have frequently resulted in a wide separation between the two related areas. Is this a good thing? We believe that it is not, and that much is to be gained in each field from sharing ideas, resources, and perhaps projects between investigators traditionally working in one discipline or the other. Some of the strengths that the Space Biology community offers include sophistication and experience in flying experiments on space missions. In turn, Astrobiology has focused heavily on ground-based and field research. Challenging physical and chemical conditions experienced in space and on other planets partially overlap, and much can be gleaned from the body of work of each community along these topical lines. A combination of these areas of expertise and experience could result in major advances to all involved. When possible, avoiding having to reinvent methods or approaches already used by a sister community can result in greater efficiencies of resource use. We will discuss some case studies where we believe there are significant overlaps including adaptation to a variety of environmental stresses, extremophiles as potential flight organisms, microfluidics as applied to planetary environment simulations, and others.